

[SUB B1] (iii) nucleotides of SEQ ID NO: 31 which encode the amino acids which comprise the fourth intracellular domain.

²₂₈ The nucleic acid molecule of claim ¹~~27~~, wherein the nucleic acid molecule comprises the sequence of SEQ ID NO: 31.

³₂₉ The nucleic acid molecule of either claim ¹~~27~~ or ²~~28~~, wherein said nucleic acid molecule is operably linked to one or more expression control elements.

A2 [SUB C1] 30. A host cell comprising the nucleic acid molecule of claim 27 or 28.

CONV 31. The host cell of claim 30, wherein the host cell is a prokaryotic host cell or a eukaryotic host cell.

⁶₃₂ A vector comprising the nucleic acid molecule of claim ¹~~27~~ or ²~~28~~.

[SUB D1] 33. A host cell comprising the vector of claim 32.

34. The host cell of claim 33, wherein the host cell is a prokaryotic host cell or a eukaryotic host cell.

⁹₃₅ A method for producing a protein or polypeptide comprising the step of culturing a host cell transformed with the nucleic acid molecule of claims ¹~~27~~ or ²~~28~~ under conditions in which the protein or polypeptide encoded by the nucleic acid molecule is expressed.

[SUB D4] 36. An isolated nucleic acid molecule encoding the amino acid sequence of SEQ ID NO: 31.

37. An amino acid sequence having at least 70% sequence identity to the amino acid sequence encoded by SEQ ID NO: 31.

38. An amino acid sequence having at least 75% sequence identity to the amino acid sequence encoded by SEQ ID NO: 31.

39. An amino acid sequence having at least 80% sequence identity to the amino acid sequence encoded by SEQ ID NO: 31.

40. An amino acid sequence having at least 85% sequence identity to the amino acid sequence encoded by SEQ ID NO: 31.

41. An amino acid sequence having at least 90% sequence identity to the amino acid sequence encoded by SEQ ID NO: 31.

42. An amino acid sequence having at least 95% sequence identity to the amino acid sequence encoded by SEQ ID NO: 31.

43. An isolated nucleic acid molecule that hybridizes to a nucleic acid molecule encoded by SEQ ID NO: 31 under the following conditions: 7% SDS, 0.5 M sodium-phosphate buffer at pH 7.2, 1 nM EDTA, pH 8.0 and 55° C.

44. An isolated nucleic acid molecule that hybridizes to a nucleic acid molecule encoded by SEQ ID NO: 31 under the following conditions: 7% SDS, 0.5 M sodium-phosphate buffer at pH 7.2, 1 nM EDTA, pH 8.0 and 65° C.

45. An isolated nucleic acid molecule encoding a fragment of at least 25 consecutive amino acids of SEQ ID NO: 31, wherein the fragment has odorant receptor activity.

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